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RESEARCH ARTICLE

Effects of Pre-teaching and Contextual Guessing Strategies on Vocabulary Achievement among Saudi EFL Learners

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ABSTRACT – A crucial but difficult component of learning English for Saudi undergraduate students, who frequently use conventional, teacher-centered approaches, is expanding one's vocabulary. By comparing the efficacy of three instructional strategies, i.e. pre-teaching, contextual guessing, and a traditional (control) approach, this experimental study fills a major vacuum in the regional literature. In a pre-test/post-test design, thirty Saudi EFL students were randomized to one of the three groups. The results show a distinct hierarchy of efficacy. The pre-teaching approach significantly improved comprehension and retention while having a strong and outstanding effect on vocabulary achievement. on the other hand, although the contextual guessing method demonstrated a quantifiable advantage, it did not offer a statistically significant advantage over conventional teaching. These findings demonstrate the pedagogical benefits of explicit, proactive vocabulary training in EFL settings where language exposure is restricted. The study finds that while unguided contextual guessing may not be adequate, incorporating systematic pre-teaching into curricula can greatly maximize vocabulary acquisition. To improve lexical development in comparable EFL contexts, instructors and curriculum designers can benefit greatly from these important, empirically supported implications.

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1.0 INTRODUCTION

Vocabulary acquisition is widely recognised as a cornerstone of second language proficiency and is particularly critical for learners of English as a Foreign Language (EFL), where limited exposure to the target language often constrains linguistic development (Nation, 2022). In the Saudi EFL context, vocabulary learning remains a persistent challenge, frequently relying on rote memorisation or decontextualised strategies that fail to foster deep processing or long-term retention (Alqahtani, 2021; Alshammari & Alhaisoni, 2020). Without sufficient lexical knowledge, students often struggle with reading comprehension, listening skills, and overall communicative competence, highlighting the urgent need for effective vocabulary instruction. While numerous instructional approaches have been explored globally, two strategies pre-teaching and contextual guessing have attracted particular attention for their potential to enhance vocabulary acquisition. However, their comparative effectiveness within the Saudi EFL context remains underexplored**,** creating a gap that this study seeks to address. This lack of regional, comparative experimental research could potentially be confirmed by a thorough, bibliometric evaluation of the area, much like reviews carried out in other fields (Ruslan et al., 2024).

Pre-teaching involves presenting unfamiliar vocabulary items before learners encounter them in context, enabling comprehension with reduced cognitive load and improved text processing. This method not only supports immediate recognition but also equips learners with the lexical scaffolding necessary to approach texts with greater confidence. In contrast, contextual guessing encourages learners to infer word meanings from textual clues, thereby promoting autonomy, deeper cognitive engagement, and long-term vocabulary retention. By engaging in inferencing, learners strengthen their problem-solving skills and develop strategies that extend beyond isolated vocabulary tasks, which makes this approach highly valued in communicative language teaching. Both strategies are grounded in cognitive and constructivist theories of language learning, emphasising active engagement and meaningful processing, which are critical for effective vocabulary acquisition.

Although extensive research has investigated these methods internationally, findings remain mixed and often context dependent. Some studies suggest that pre-teaching is more efficient for immediate vocabulary acquisition, supporting learners in recognising and recalling new words with minimal cognitive load, whereas others emphasise the long-term benefits of contextual guessing, which encourages deeper processing, inferencing skills, and retention over time (Rahimy & Shams, 2021). Nevertheless, in Saudi classrooms, where traditional instruction frequently relies on rote memorisation, translation, and teacher-centred practices, empirical evidence directly comparing these two strategies through controlled experimental designs is still scarce. Examining their comparative effectiveness can provide valuable insights not only for enhancing learners' vocabulary knowledge but also for fostering greater motivation, autonomy, self-regulation, and engagement in the language learning process. Furthermore, such research can inform educators about the practical feasibility of implementing these strategies in real classroom settings, helping to align teaching approaches with learners' cognitive needs and the pedagogical goals of EFL instruction. By addressing this gap, the present study evaluates the comparative impact of pre-teaching and contextual guessing on Saudi undergraduate EFL learners, thereby contributing

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to the growing body of literature on vocabulary instruction and offering practical insights for curriculum design, classroom practices, and policymaking in the Saudi EFL context.

Before presenting the detailed review of previous studies, it is helpful to provide an overview of research on vocabulary instruction in EFL contexts. This section examines existing studies on pre-teaching and contextual guessing strategies, focusing on their reported effectiveness, application in classroom settings, and the outcomes achieved. By analysing the findings, methodological approaches, and limitations of prior research, the review highlights trends and patterns that inform the current study. This overview sets the stage for a critical examination of how these strategies have been implemented and evaluated, particularly in contexts similar to that of Saudi undergraduate EFL learners.

1.1 Pre-teaching Vocabulary

Pre-teaching vocabulary is a widely employed instructional strategy in EFL classroom. It involves introducing key vocabulary items to learners before they encounter a reading or listening text. This proactive approach is grounded in cognitive theories of learning, particularly Schema Theory, which posits that comprehension is facilitated when learners activate prior knowledge and form mental scaffolding (Anderson, 1984). By pre-teaching vocabulary, educators aim to reduce the cognitive load associated with processing unfamiliar words, enabling learners to focus more on understanding the overall meaning of the text (Nation, 2013; Hulstijn, 2001).

Laufer and Goldstein (2004) emphasised that pre-teaching facilitates the formation of mental representations, or "lexical entries," which improve the speed and accuracy of word recognition. These mental representations are essential in both receptive and productive language tasks. Learners who have been pre-exposed to vocabulary items tend to demonstrate improved comprehension, not only because they understand the words but also because they are better equipped to process syntactic and semantic structures efficiently. This aligns with Nation's (2022) assertion that a well-developed vocabulary base significantly contributes to reading fluency and overall language proficiency. Pre-teaching has particular benefits for low- to intermediate-level learners who may lack the strategic competence to infer meaning from contextual clues (Webb, 2008). For such learners, being introduced to unfamiliar vocabulary before encountering it in context helps build confidence and ensures a more equitable learning experience. It provides a linguistic foundation that reduces the likelihood of misinterpretation or disengagement due to lack of understanding. Moreover, pre-teaching often includes multiple forms of vocabulary input definitions, translations, example sentences, and images which cater to different learning styles and support multimodal learning (Oxford, 2001). Studies on the use of platforms such as YouTube show how visual and auditory media can greatly improve knowledge acquisition and engagement, demonstrating the effectiveness of such multimodal input (Ali, et. al 2022).

Empirical studies continue to provide robust support for the efficacy of pre-teaching. For example**,** Zhang and Lu (2022) found that explicit pre-teaching of target words significantly improved both recognition and productive use of vocabulary among Chinese EFL learners. Similarly, Bui and Teng (2023) demonstrated that pre-teaching academic vocabulary in English for Academic Purposes (EAP) classes enhanced students' comprehension of dense reading passages. More recently, González-Fernández and Schmitt (2024) emphasized that pre-teaching, especially when combined with interactive and meaning-focused tasks such as collaborative discussions and games, fosters deeper processing and long-term retention of new vocabulary. Pre-teaching also contributes to learners' metacognitive awareness. When learners are explicitly introduced to challenging words before reading, they often pay more attention to vocabulary while reading and are more likely to notice word forms, usage, and collocations (Grabe & Stoller, 2011). This noticing facilitates long-term retention, especially when words are recycled across multiple learning encounters. Thus, pre-teaching can be considered not only a preparatory tool but also a strategy that fosters deeper language processing.

Although pre-teaching vocabulary helps students recognise words immediately, it has been criticized for encouraging passive learning and a reliance on teacher direction. Pre-teaching, according to Chowdhury and Ara (2023), may prevent students from acquiring independent vocabulary learning techniques since they become dependent on teachers to give them meanings rather than letting them deduce from context. Furthermore, the short-term benefits of pre-teaching usually wear off with time, and frequent exposure to terms in relevant settings is more conducive to long-term vocabulary learning. Topal (2024) emphasised the importance of more contextualized and post-teaching approaches to promote active vocabulary learning and learner independence, warning that an over-reliance on pre-teaching can lead to superficial knowledge. It also aligns with critiques from Thornbury (2002), who argues that vocabulary instruction should involve active construction of knowledge rather than mere transmission. Another concern is the potential mismatch between pre-taught vocabulary and learners' actual needs. Teachers may select words based on perceived difficulty or importance, which might not align with students' interests or communicative needs (Graves, 2006). Additionally, pre-teaching too many words at once may cause cognitive overload, undermining the intended benefits of the approach (Sweller, 1988).

To address these concerns, some researchers advocate a balanced approach. Pre-teaching should be selective, focusing on high-frequency, low-transparency, and content-critical words necessary for comprehension (Nation, 2013). It should also be paired with tasks that require learners to use the vocabulary in context, such as sentence creation, cloze activities, or short writing assignments, to ensure active engagement and meaningful learning (Richards & Renandya, 2002). In conclusion, while pre-teaching vocabulary is not a panacea, it remains a valuable tool in the EFL classroom when used judiciously and in combination with other vocabulary learning strategies. Its success depends on thoughtful implementation, learner involvement, and ongoing reinforcement. When effectively integrated into the instructional sequence, pre-teaching not only improves vocabulary knowledge but also enhances overall language comprehension and learner confidence.

1.2 Contextual Guessing

Contextual guessing, also known as inferencing, is a strategic process by which language learners deduce the meanings of unfamiliar words by analysing surrounding textual information. These contextual cues may include syntactic structures, morphological indicators, collocations, and semantic relationships within the sentence or broader discourse (Nassaji, 2003; Nation, 2013). This strategy reduces reliance on dictionaries or direct translation, fosters learner autonomy, and promotes higher order thinking skills, as learners engage deeply with the text to make informed lexical predictions (Carrell, 1987). Gu and Johnson (1996) argue that learning vocabulary through context fosters deeper cognitive processing because it involves integrating new lexical items into the learner's existing mental schema. This approach aligns with the depth-of-processing hypothesis, which suggests that the more deeply information is processed, the more durable the memory trace (Craik & Tulving, 1975). When learners attempt to infer meaning from context, they analyse the role of the word in the sentence, assess its possible meaning based on known words, and confirm or revise their hypotheses as they continue reading. Such active engagement improves vocabulary acquisition and enhances reading comprehension and retention over time (Pulido, 2007).

Numerous studies support the benefits of contextual guessing in EFL contexts. Chen (2016) reported that explicit instruction in inferencing strategies significantly improved both vocabulary gain and reading comprehension scores among intermediate-level EFL learners. Fraser (1999) found that learners trained to identify and use contextual clues developed a larger vocabulary base over time. Laufer (2005) emphasised that contextual guessing is central to incidental vocabulary learning, whereby learners acquire new words through repeated exposure in meaningful contexts without direct instruction. This process is particularly important for developing a large, automatic vocabulary repertoire, essential for fluent reading and academic success. The advantages of contextual guessing for EFL students are supported by two recent research. Comparing advanced EFL students taught contextual guessing tactics to those taught traditionally, Al-Ghazo and Ta'amneh (2022) discovered that the former greatly enhanced their vocabulary proficiency and reading comprehension. Hasanah (2024) highlighted the importance of contextual guessing instruction in vocabulary acquisition and academic skill development by reporting that it significantly improved reading comprehension and promoted critical thinking among Indonesian pre-university students (Al-Ghazo & Ta'amneh, 2022; Hasanah, 2024).

Contextual guessing encourages learners to adopt a problem-solving orientation toward reading, which strengthens both strategic processing and metacognitive awareness. Recent research highlights that when learners actively infer word meanings from surrounding text, they not only enhance their reading comprehension but also develop the ability to manage difficulties more independently (Fraser, 2022; Teng, 2022). This strategy contributes to vocabulary depth by fostering sensitivity to semantic distinctions, collocational patterns, and register variation as mediated through contextual cues (Laufer, 2021; Webb & Nation, 2017). Studies on strategic communication, such the intentional delivery techniques employed in video resumes, emphasise the practical significance of comprehending register and the significance of modifying language to context and audience (Ali et. al, 2022). Moreover, studies suggest that contextual guessing fosters learner resilience with challenging texts, as it builds confidence in approaching unfamiliar lexical items without immediate reliance on external aids (Zhang & Lu, 2022). These findings indicate that inferencing is a valuable skill for promoting autonomy and long-term vocabulary growth.

Despite these benefits, contextual guessing also has important limitations. Studies confirm that accurate inferencing requires learners to know at least 95% of the running words in a text, a threshold many EFL learners struggle to meet (González-Fernández & Schmitt, 2024; Webb, 2020). Insufficient lexical knowledge may lead to incorrect guesses, frustration, or even disengagement from reading tasks (Bui & Teng, 2023). Furthermore, not all contexts provide adequate cues, particularly in technical, idiomatic, or culturally loaded discourse (Li, 2021). To address these challenges, scholars recommend integrating contextual guessing with supportive strategies such as pre-teaching key vocabulary, guided dictionary use, or scaffolded inferencing tasks (Shen, 2021; Teng & Reynolds, 2019). Instructional practices for example think-aloud protocols, reflective vocabulary journals, and collaborative gap-fill exercises allow teachers to balance learner independence with necessary support, ensuring that contextual guessing contributes effectively to both comprehension and vocabulary acquisition. In sum, Contextual guessing is a valuable and versatile strategy supporting both vocabulary acquisition and reading comprehension. When effectively taught and scaffolded, it equips learners with inferencing skills that contribute to lifelong language learning and academic success.

1.3 Comparative Studies on Vocabulary Learning Strategies

Recent research emphasizes that learners' perceptions and strategic awareness play a crucial role in successful vocabulary acquisition. For example, Ahmad et al. (2023) found that explicit training in metacognitive strategy components enhanced learners' awareness and control over vocabulary learning processes. Several comparative studies have explored the relative effectiveness of vocabulary learning strategies, particularly between pre-teaching and contextual guessing. These strategies represent two different pedagogical approaches: explicit instruction versus inferencing-based learning. Research consistently indicates that each approach contributes differently to various dimensions of vocabulary knowledge, such as form recognition, meaning comprehension, and usage fluency (Schmitt, 2020; Webb & Nation, 2017). Studies demonstrate that pre-teaching yields immediate gains in word recognition and recall, particularly when learners encounter target vocabulary multiple times prior to engaging with a text (Zhang & Lu, 2022). In contrast, contextual guessing, though slower to produce initial gains, tends to foster more sustained retention and flexible application of vocabulary in novel contexts (Li, 2021; Teng, 2022). This aligns with findings from González-Fernández and Schmitt (2024), who emphasized that inferencing encourages deeper semantic processing and supports the transfer of vocabulary knowledge across different reading situations.

Moreover, there is growing evidence that merging educational approaches has a synergistic effect. Teng (2021) found that a dual method that combined contextual guessing instruction with pre-teaching produced noticeably better results on immediate and delayed

vocabulary examinations than using each strategy alone. Likewise, Lee and Lee (2022) noted that hybrid models support immediate acquisition and long-term vocabulary depth, highlighting pedagogical value in integrating explicit and inferential teaching. While pre-teaching and contextual guessing strategies focus on structured classroom instruction, Khan, Alharbi, and Mohd Radzuan (2024) demonstrated that mobile-learning via WhatsApp significantly improved both vocabulary acquisition and speaking proficiency in a Saudi EFL context, suggesting that technology-enhanced interventions can complement traditional vocabulary strategies.Such combined approaches allow learners to benefit from the strengths of each method: Pre-Teaching supports rapid comprehension and confidence, while contextual guessing fosters autonomy, critical thinking, and deeper semantic processing. Though their use has certain benefits and drawbacks, educational technology can effectively support the implementation of such hybrid models. For instance, Learning Management Systems (LMS) have been recognised as useful tools for organising and delivering differentiated vocabulary instruction (Nasim et al. 2024). Moreover, the persuasive communication techniques examined in domains such as social media influencer marketing (Fauzi et al., 2024) may provide fresh perspectives on creating interesting and genuine contextual guessing tasks that replicate language use in everyday situations. This integration can be particularly effective in diverse classrooms, accommodating learners of varying proficiency levels and learning styles, and providing opportunities to scaffold instruction according to learners' needs.

In Saudi Arabia, empirical investigations remain limited. Alqahtani (2021) reported that Saudi EFL learners benefited from structured, explicit vocabulary instruction due to generally limited lexical knowledge and reading fluency. However, the study also highlighted learners' challenges in using context to infer word meaning, pointing to a gap in inferencing exposure. More recent research by Alrabai and Moskovsky (2020) emphasised that Saudi learners often rely on teacher-led methods and are less accustomed to autonomous strategies like contextual guessing, reflecting a systemic preference for direct instruction. This lack of consensus and context-specific research stresses the need to investigate the comparative effectiveness of pre-teaching and contextual guessing among Saudi EFL learners. Recent empirical studies indicate that both methods offer distinct advantages: pre-teaching is particularly effective for lower-proficiency learners, facilitating immediate vocabulary recognition and recall (Zhang & Lu, 2022), whereas contextual guessing promotes deeper, autonomous learning and flexible application of words in novel contexts (Li, 2021; González-Fernández & Schmitt, 2024). However, Saudi educational practices may not fully develop inferencing skills, limiting learners' ability to benefit from context-based strategies unless explicitly taught (Alharbi, 2023). Examining these strategies comparatively provides valuable insights for curriculum designers and educators, helping to implement teaching approaches that optimise both immediate learning gains and long-term retention, and ensuring that vocabulary instruction aligns with learners' cognitive capacities and language development goals.

To address this gap, the present study investigates the comparative effects of three vocabulary instructional strategies i.e. pre-teaching**,** contextual guessing**,** and traditional (control) on the vocabulary acquisition of Saudi undergraduate EFL learners. Specifically, it explores whether there are significant differences in vocabulary learning outcomes among students taught using these three approaches. Through a quasi-experimental design involving a pre-test, post-test, and three groups (one control and two experimental), the study aims to determine which instructional method leads to superior vocabulary gains. Accordingly, this research seeks to answer the following questions:

1. What is the comparative effectiveness of pre-teaching, contextual guessing, and traditional instructional strategies on vocabulary acquisition among Saudi undergraduate EFL students?
2. Are there statistically significant differences in vocabulary learning outcomes between students taught using these three strategies (pre-teaching, contextual guessing, and traditional instructional strategies)?
3. What are the respective effect sizes quantifying the magnitude of the intervention for each strategy (pre-teaching, contextual guessing, and traditional instructional strategies)?

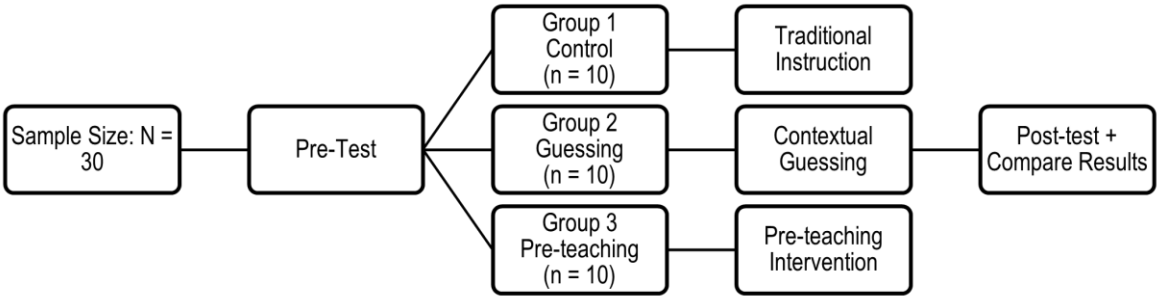
2.0 METHODOLOGY

2.1 Research Design

The study uses a pre-test/post-test control group structure, a strong framework developed for assessing educational interventions while accounting for significant risks to internal validity, was used in this study's quasi-experimental design (Campbell & Stanley, 1963). One of three conditions, a control group, a pre-teaching intervention group, or a guessing-from-context intervention group was allocated to participants at random. This design facilitates both within-subject comparisons of learning gains (pre-test vs. post-test) and between-subject comparisons to isolate the relative effectiveness of each instructional strategy against a baseline, as described by Creswell and Creswell (2018). This allows for a clear analysis of cause-and-effect. Figure 1 shows the pre-test/post-test assessment procedure used to gauge vocabulary learning as well as participant assignment to three vocabulary learning conditions as part of the quasi-experimental study design.

Figure 1

Quasi-experimental research design with pre-test/post-test control group



Note: This diagram illustrates the research design framework adapted from Campbell & Stanley (1963) and Creswell & Creswell (2018)

2.2 Participants

The participants were 30 Saudi EFL learners enrolled at Qassim University, aged between 17 and 22 years, with intermediate English proficiency as determined by their scores on the university's placement test. The participants were divided equally into three groups of 10 each: the control group, the pre-teaching vocabulary group, and the guessing from context group. This sample size is consistent with similar vocabulary intervention studies and allows for sufficient statistical power (Fraenkel et al., 2019). Although larger sample sizes are typically preferred to enhance generalizability, small sample sizes can be acceptable in controlled experimental studies where the internal validity is high, and the intervention period is short (Creswell, 2012). This study involved three carefully monitored groups, and each group consisted of 10 participants, which aligns with the minimum recommendation for small-scale educational experiments or exploratory research (Fraenkel et al., 2019). The selection of equal group sizes also ensured comparability across conditions, reducing potential bias and allowing for a more reliable interpretation of the statistical results.

According to Dörnyei (2007), sample sizes in classroom-based L2 research can be as small as 6–10 per group if the research design is strong and the analysis remains descriptive or involves repeated measures (such as pre-tests and post-tests). Moreover, such sample sizes are often used in applied linguistics studies focusing on intervention efficacy over short durations. In the Saudi EFL context, access to larger groups is often constrained by institutional scheduling, limited class availability, and strict curriculum structures, making smaller groups both practical and methodologically feasible for controlled intervention studies (Alharbi, 2020; Al-Seghayer, 2019). Moreover, the fact that even young students frequently use technology for learning (Ali et. al, 2020) suggests that future research could utilize digital tools to deliver interventions to significantly larger samples, overcoming some of these logistical issues. Thus, while this study's findings may not be broadly generalizable, the sample size is adequate for drawing preliminary insights and informing larger-scale future studies.

2.3 Instruments

Two main instruments were used in this study: a vocabulary pre-test and post-test. Both tests consisted of 20 items designed to assess knowledge of the target vocabulary words taught during the intervention. The tests included multiple-choice questions as tasks. The validity and reliability of the measurements were confirmed by a thorough evaluation of the vocabulary assessment instrument using appropriate psychometric properties. The Kuder–Richardson Formula 20 (KR-20) to evaluate dichotomously-scored tests (Tavakol & Dennick, 2011) was used to determine the instrument's internal consistency. The analysis showed that the pre-test had an acceptable dependability coefficient (KR-20 =.69), while the post-test had an excellent level of reliability (KR-20 =.83). This development suggests that the exam was a reliable indicator of vocabulary knowledge over the course of the study. Furthermore, a comprehensive piloting approach was employed to confirm the validity of the instrument. As a crucial step in guaranteeing that a test appropriately reflects the construct domain, content validity was guaranteed by explicitly aligning test items with the target lexical items and instructional objectives (Streiner, 2003). At the same time, face validity was evaluated to make sure that the exam seemed to the intended respondents to be a valid and pertinent indicator of their vocabulary knowledge, which encouraged meaningful participation.

2.4 Intervention Procedure

The experimental intervention was incorporated into the participants' regular English curriculum and was conducted for four weeks. The two experimental groups were given different vocabulary strategy training after a pre-test that was given a week earlier, while the control group was given the regular curriculum without any strategy training. To compare the efficacy of the various teaching strategies, a post-test was given immediately following the intervention. Before beginning reading assignments, the pre-teaching group was given clear introductions to the target vocabulary items. To improve comprehension and recall, the instructor used practice exercises, illustrative example sentences, and precise definitions (Zhang & Lu, 2022; Bui & Teng, 2023). On the other hand, the contextual guessing group was taught to use linguistic clues to infer the meanings of unknown terms. The emphasis of the instruction was on utilizing the grammatical structure, surrounding words, and the overall meaning of the paragraph. Through supervised reading sessions, students worked on using these inferencing techniques to improve their vocabulary and reading comprehension at the same time (Li, 2021; González-Fernández & Schmitt, 2024).

3.0 RESULTS

3.1 Comparison of Instructional Strategy Effectiveness

Table 1 displays descriptive statistics for the vocabulary scores obtained before and after the test. The pre-test means for the control (M = 8.8, SD = 1.13), guessing-context (M = 8.5, SD = 1.64), and pre-teaching (M = 8.9, SD = 1.72) groups were nearly identical, indicating that the participants were successfully assigned at random and that their baseline vocabulary knowledge was equal. There was a noticeable difference in post-test performance after the intervention. With a mean score of 14.2 (SD = 1.68), the pre-teaching group showed the biggest improvement. While the control group, which got conventional instruction, only slightly improved (M = 9.6, SD = 1.26), the guessing-context group improved moderately (M = 11.3, SD = 1.70). Consistent within-group variability is indicated by the comparatively stable standard deviations from pre-test to post-test for all groups, indicating that the interventions had a consistent impact on participants despite individual variances.

Table 1

Descriptive statistics for pre-test and post-test vocabulary scores *across control, contextual guessing, and pre-teaching groups*

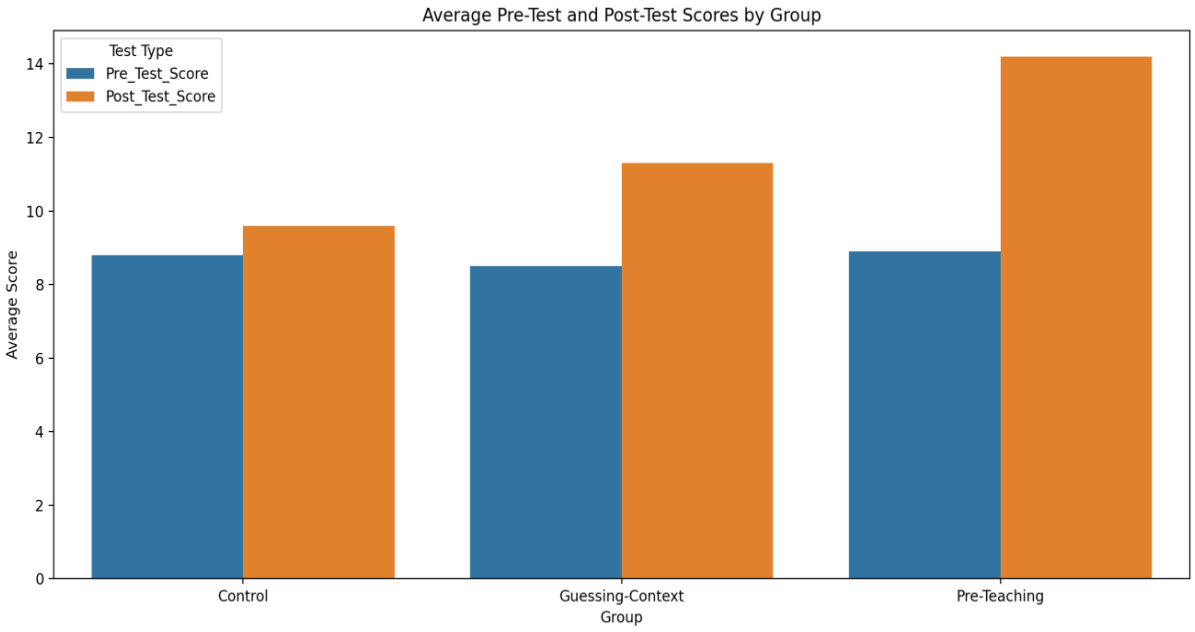
Group	Pre-test M	Pre-test SD	Post-test M	Post-test SD
Control	8.8	1.13	9.6	1.26
Guessing-Context	8.5	1.64	11.3	1.7
Pre-Teaching	8.9	1.72	14.2	1.68

Note. M = Mean; SD = Standard Deviation

The average pre-test and post-test scores for the control, contextual guessing, and pre-teaching groups are shown in Figure 2 to provide a comparative comparison of vocabulary learning. All three groups' pre-test to post-test scores improved universally, according to the data, indicating that some learning took place irrespective of the teaching strategy. The graphic representation, however, highlights the glaring disparities in each strategy's efficacy. With a much better post-test score than the other two groups, the pre-teaching group shows the largest gain, indicating that it was the most effective vocabulary retention intervention. Additionally, the contextual guessing group outperforms the control group, albeit not as significantly. The relative effectiveness of these teaching strategies is demonstrated by this progression, which shows that pre-teaching was the most effective method under these experimental conditions. The control group gained a modest amount, the contextual guessing group gained an intermediate amount, and the pre-teaching group made a significant leap.

Figure 2

Comparison of pre-test and post-test mean scores across control, contextual guessing, and pre-teaching group



Further, a one-way ANOVA was conducted to compare the post-test scores among three groups: control, pre-teaching, and guessing-context. The analysis revealed a statistically significant difference in post-test scores among the groups, $F(2,27) = 22.10$, $p < .001$. Post hoc analysis using Tukey's HSD test indicated that the pre-teaching vocabulary group performed significantly better than both the control group and the guessing-context group. The results of the Tukey's HSD test were given above. Additionally, effect sizes were calculated using Cohen's d to understand the magnitude of change. The pre-teaching strategy had a very large effect size, Cohen's d = 3.10, indicating a substantial impact on vocabulary scores. The control group had a medium effect size, Cohen's d = 0.67,

while the guessing-context group had a large effect size Cohen's d = 1.67. These findings suggest that the pre-teaching strategy is the most effective approach for improving vocabulary test scores among the groups studied.

These findings indicate that the pre-teaching strategy is the most effective strategy to improve vocabulary mastery. This implies that providing learners with targeted vocabulary support before engaging with texts appears to significantly enhance comprehension and retention. While the guessing-context strategy also produced meaningful gains, its effectiveness may depend on learners' prior vocabulary knowledge and inferencing skills. By contrast, the modest effect observed in the control group suggests that incidental exposure alone is insufficient for substantial vocabulary growth. Overall, the results underscore the value of structured, explicit vocabulary instruction in EFL contexts, particularly for learners who may struggle with independent inferencing or contextual guessing.

3.2 Differences in Vocabulary Learning Outcomes across Instructional Strategies

The differences in vocabulary learning outcomes across instructional strategies that is shown in Table 2 presents the results of paired-samples t-tests. The results confirmed that there are significant difference within-group improvements in vocabulary scores for all learning conditions (all $p < .001$). The highest t-statistic ($t = -20.36$) indicated that the pre-teaching group had the highest benefit. Additionally, the guessing-context group exhibited a high effect ($t = -14.00$), whereas the control group showed a significant but noticeably lesser improvement ($t = -6.00$). The findings show a gradient of efficacy, indicating that explicit pre-teaching was superior to contextual guessing, which was more successful than traditional instruction alone.

Table 2

One-sample t-test results for each group

Group	t	p
Control	-6.00	.000
Pre-Teaching	-20.35	< .001
Guessing-Context	-14.00	< .001

Note. Values represent one-sample t-test statistics. p-values reported as exact or rounded to three decimals: very small values shown as < .001.

Further analysis was conducted using a one-way analysis of variance (ANOVA) on the post-test scores to ascertain whether the instructional strategies led to statistically significant differences in learning outcomes. A significant main effect of instructional technique on vocabulary scores was found by the study ($F (2, 27) = 22.10$, $p < .001$). This finding suggests that at least two of the three groups' post-test performance differed statistically significantly. These results are displayed in Table 3.

Table 3

One-way ANOVA for post-test vocabulary scores

Source	SS	Df	MS	F	p
Between Groups	44.2	2	22.1	22.1	< .001
Within Groups	27.0	27	1.0		
Total	71.2	29			

Note. SS = Sum of Squares; df = degrees of freedom; MS = Mean Square.

Post-hoc comparisons using Tukey's HSD test revealed specific pairwise differences between the instructional groups, as detailed in Table 4. There were found to be two majors pairwise differences. First, the pre-teaching group fared significantly better than the control group ($MD = 4.6$, $p < .001$). Second, the pre-teaching group outperformed the guessing-context group by a substantial margin ($MD = 2.9$, $p < .001$). $MD = 1.7$, $p = .05$, indicated that there was no statistically significant difference between the guessing-context and control groups. As a result, the instructional strategies can be arranged in decreasing order of effectiveness: pre-teaching, guessing-context, and the traditional way. The post-test results did not differentiate between the three methods.

Table 4

Results of Tukey's HSD test comparing post-test vocabulary scores across control, contextual guessing, and pre-teaching groups

Group 1	Group 2	Mean Difference	p-adj	Lower	Upper	Significant
Control	Guessing-Context	1.7	0.05	-0.03	3.43	No
Control	Pre-Teaching	4.6	0.00	2.86	6.33	Yes
Guessing-Context	Pre-Teaching	2.9	0.00	1.16	4.63	Yes

Note. A significant result indicates a statistically meaningful difference in post-test vocabulary scores between the compared groups.

3.3 Effect Sizes of Instructional Interventions

Cohen's *d* effect sizes were computed for each group in order to assess the practical importance of the vocabulary improvements; the findings are shown in Table 5. The magnitude of these effects shows the substantive influence of each instructional technique and serves as an essential supplement to the statistical significance tests. A distinct hierarchy of instructional efficacy was shown by the effect sizes when compared to standard standards (Cohen, 1988). The improvement in the control group correlated with a medium effect (d = 0.67), indicating that vocabulary gains from regular education alone are only moderate. Conversely, the guessing-context approach yielded a significant effect (d = 1.67), suggesting a significant and instructive advantage over the control condition. Most remarkably, the pre-teaching group had a very large effect size (d= 3.10), indicating a very strong intervention effect that was significantly greater than that of the other strategies. The results of the ANOVA and post-hoc analyses are strongly supported by this pattern of effect sizes, which shows that although all instructional conditions improved vocabulary learning, the pre-teaching technique had the most significant and noticeable influence.

Table 5

Effect sizes (Cohen's d) for each group

Group	Cohen's d
Control	0.66
Pre-Teaching	3.1
Guessing-Context	1.67

4.0 DISCUSSION

The findings of this study indicate that the pre-teaching strategy was the most effective approach for enhancing vocabulary acquisition among Saudi EFL learners. Participants who received explicit vocabulary instruction prior to engaging with texts significantly outperformed the other groups in post-test scores, and the large effect size underscores the substantial impact of this method on learning outcomes. These results align with recent research emphasizing the benefits of explicit pre-teaching for facilitating comprehension and reducing cognitive load during reading or listening tasks (Alamer, 2021; Webb & Nation, 2017). By providing targeted vocabulary support in advance, learners can focus more on comprehension rather than decoding unfamiliar words, which is particularly important in EFL contexts with limited language exposure (Alqahtani, 2015; Lee & Teng, 2022).

In contrast, the contextual guessing group demonstrated smaller vocabulary gains than anticipated. While inferring word meanings from context encourages learner autonomy and strategic processing, its effectiveness depends on learners' existing vocabulary knowledge and inferencing skills (Nassaji, 2017; Paribakht & Wesche, 2018). Without sufficient prior knowledge or strategy training, students may struggle to accurately deduce meanings, which may explain the modest gains in this study. These findings corroborate previous research showing that purely inferential approaches may be less effective for learners with limited language input (Schmitt, 2020; Webb & Chang, 2015). The control group, which received no targeted intervention, showed only modest improvements, supporting the view that vocabulary development through exposure alone is often slow and inconsistent. This reinforces calls for systematic and deliberate vocabulary instruction in EFL contexts (Nation, 2013; Alamer & Lee, 2022). The practical implications are significant. EFL instructors and curriculum planners should integrate pre-teaching methods consistently to maximize vocabulary gains, especially where instructional time is limited. Choosing the right approach is also crucial; relying too much on unstructured techniques, particularly contextual guessing without scaffolding, could harm students who are still learning the fundamentals. Instructors could use online collaborative tools to give the help they need. By enabling guided strategy practice, systems such as Google Docs, for instance, have been shown to boost motivation and enhance results in language learning activities (Shahidan et.al, 2022).

Despite these contributions, there are a number of drawbacks with the study. First, research on academic work-life balance has shown that aspects other than pedagogy, such as teacher workload and well-being, are crucial for sustained educational innovation and are necessary for the successful adoption of these strategies on a larger scale (Fauzi et al., 2024). Second, the sample size was small, and participants were from a single institution, limiting generalizability. Third, the study examined only short-term vocabulary gains; future research should investigate long-term retention and the interaction of these strategies with learners of different proficiency levels. Nevertheless, the study confirms that structured vocabulary instruction is more effective than incidental or inferential approaches in enhancing vocabulary acquisition. Explicit pre-teaching provides the most substantial gains in EFL contexts, while strategies like contextual guessing require proper scaffolding to be effective, offering practical guidance for optimizing vocabulary pedagogy.

Additionally, although though the pre-teaching approach worked best when used alone, the results should not be interpreted as a complete rejection of contextual guessing. Both strategies could be strategically integrated into a more comprehensive instructional model. For example, a small collection of high-utility, technical, or challenging-to-infer terms that are essential for text comprehension could be front-loaded using pre-teaching. Students could then receive structured practice to build this important skill in a supportive setting by being led through contextual guessing tasks for less important language. This combination method supports both explicit instruction and strategy training, which is in line with Nation's (2013) idea of a balanced vocabulary curriculum. By doing this, educators may nurture the long-term student autonomy that is crucial for language acquisition outside of the classroom while also provide the immediate lexical support required for comprehension.

Considering the particular characteristics of the EFL students in this study also helps to explain the notable differences in results between the groups. Students in learning situations with limited daily exposure to the target language benefit greatly from the specific input that pre-teaching provides (Nation, 2022; Alqahtani, 2021). The importance of structured, assured interactions with lexical items is increased in such circumstances since learners are less likely to encounter language regularly and naturally. The lower returns from contextual guessing, on the other hand, might be the result of both a lack of strategy training (Alrabai & Moskovsky, 2020; Alharbi, 2023) and the substantial prior vocabulary knowledge that serves as a foundation for correctly deriving new word meanings from surrounding linguistic clues (Webb, 2020; González-Fernández & Schmitt, 2024). As a result, the findings highlight the importance of learner background and language context in mediating the effectiveness of various teaching strategies.

5.0 CONCLUSION

This study examined the relative effectiveness of pre-teaching, contextual guessing, and traditional instruction in enhancing vocabulary acquisition among Saudi EFL learners. The findings revealed that the pre-teaching strategy led to the greatest improvement in learners' vocabulary performance, emphasizing the value of explicit and structured instruction in EFL contexts where exposure to English is limited. These results highlight the pedagogical significance of integrating systematic vocabulary teaching to promote both comprehension and retention. However, the study's scope was limited by its sample size and focus on a single institution, which may constrain the generalizability of the findings. It also did not assess long-term vocabulary retention or learners' perceptions of the strategies. Future research should therefore include more diverse learner populations, explore sustained effects over time, and incorporate qualitative approaches to capture learners' experiences and attitudes. Overall, this study underscores the effectiveness of pre-teaching strategies for improving vocabulary learning outcomes and suggests that combining structured pre-teaching with guided contextual guessing can enhance learner autonomy and overall language proficiency in similar EFL contexts.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Hafsa Pir Mukhtar (Conceptualisation; Methodology; Investigation; Data curation; Formal analysis; Writing– original draft; Visualisation)

Ruhil Amal (Resources; Software; Validation; Writing – Review & editing)

Zuraina Ali (Supervision; Project administration; Writing – Review & editing; Validation)

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